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Examination of U_{RANUS} for the Detection of New Satellites.

As the opposition of *Uranus* comes at a time of the year when our weather is most unfavorable, there have been very few occasions when the planet has been really well seen. Magnifying powers of 520 and 700 have generally been used, and very rarely 1000. In our best seeing, it would be advantageous to employ 1500 and even 2000. Under fairly good conditions, we have usually seen *Umbriel* and *Ariel* in all parts of their orbits. We are satisfied that no new satellite half as bright as *Ariel* at elongation exists within the orbit of *Umbriel*. It is not likely that any such object exists within the orbit of *Titania*.

When we come to the space beyond *Oberon* it is not possible to speak with certainty from our past observations. With an aperture as large as 36 inches, many small stars are visible in the field of view. If the atmosphere is steady and the circumstances are good, their places can be quickly determined. If, however, the conditions are unfavorable, as they ordinarily have been, it is often necessary to employ all the available time in making sure of the existence of some of the objects seen, and therefore it is possible that others have escaped notice. It is not practicable to be more definite in statement at present.

E. S. H., J. M. S.

DISCOVERY OF A NEW CRATER ON THE MOON NEGATIVES OF THE LICK OBSERVATORY, BY PROFESSOR WEINEK OF PRAGUE.

[It is known that Professor Weinek is making a careful study of the Moon negatives of the Lick Observatory, and is recording his results in drawings from the negatives which he enlarges 10-fold. See *Publ.* A. S. P. vol. III, page 253. He has already spent more than 200 hours of actual work on such drawings on 101 different days and has completed several drawings which it is hoped to publish shortly. Some 40–50 hours of work are required for a single crater. He has lately discovered a new crater on one of our negatives and at his request I give a brief description of its position, etc. I may add that a letter lately received from Professor Weinek says that he has found that our best negatives (as for example that of August 31, 1890) require to be enlarged in the drawing *twenty-fold* in order to show all the features. This corresponds to a magnifying power of more than

1000 diameters in the telescope; or to put it in another way, the diameter of the full Moon on such a drawing would be more than nine feet. The results already obtained by Professor Weinek completely justify the opinion of our Moon negatives which I expressed in the *Publications*, vol. II, p. 15. E. S. H.]

Extract from a letter of Professor Weinek.

K. K. STERNWARTE IN PRAG, 1891, May 23.

"* * * I send you to-day a rapid sketch of a part of the Moon southwest of *Pallas* and *Bode* (southeast of *Triesnecker*) copied from the negative of the Moon made at the Lick Observatory August 15, 1888. This shows east of A and B [SCHMIDT'S Map, section I] a crateriform object which is not laid down by either SCHMIDT, MAEDLER, LOHRMANN, or NEISON. * * * To explain my description of the position of the new object, I take as the origin of co-ordinates (O) the middle point of A B. The meridian through O lies, according to SCHMIDT, in the picture 7° to the left of B O, above, and 7° to the right of A O, below [north]. I call the position-angle (p) the angle from the northend of the meridian counted towards the east. This angle together with the distance (d) determines the place of the new crater. [On my drawing, ten-fold enlarged, I find] A B = 33.7 mm; d = 8.5 mm; $p = 75^{\circ}$; diameter = 1.8 mm.

"The question now is whether this is due to some imperfection of the plate. If it is a real object, the discovery is interesting, for Schmidth has drawn everything in this neighborhood as level. * * * If the object is real it has a different character from that of the two craters towards the south, because its shadow shows a greater extent. It cannot be funnel-shaped, but it must have a flat base and its west wall must be higher than the east one, and the west wall must decline gently towards the exterior. It may be called a crater-pit or round valley * * * ."

L. WEINEK.

[This discovery of Professor Weinek's was verified by me on the L. O. negatives of Aug. 24 and Nov. 3, 1890. The negative of Sept. 22, 1890, shows the region very well, and it is especially interesting as exhibiting an extensive system of *rills*, all of which are new, and some of which are formed of confluent craters. Professor Weinek's new crater lies at the intersection of two of these rills. A sketch of the neighborhood, showing the new

crater and some of the rills was made from the L. O. negative of Sept. 22 and sent to Professor Weinek on June 10. On June 15 I examined the region with the large telescope and sent Professor Weinek a copy of my drawing. It shows the new crater as circular with an interior shadow. It seems to be situated in the exact centre of a raised mound (of its own lava?) On the edge of this mound is a companion crater also new. Other new features were seen and mapped, and they will be published in due time.

E. S. H.]

Appointment of Dr. Henry Crew as Astronomer in the Lick Observatory.

The Regents of the University of California elected Dr. Henry Crew, Instructor of Physics in Haverford College, as Astronomer in the Lick Observatory at their regular meeting of July 14, 1891.

E. S. H.

PERMANENT IMPROVEMENTS AT MOUNT HAMILTON.

Observatory for the Crocker Photographic Telescope: A new observatory has been built to cover the WILLARD photographic lens (a=5.9 inches, f=31 inches) and its mounting by BRASHEAR, which have been presented to the Lick Observatory by Hon. C. F. CROCKER. The dome is ten feet in diameter, and attached to it is a photographic dark room, etc., about ten feet by eleven feet. The building has been placed on the slope of the hill a few feet south of HUYGHENS reservoir. This equatorial mounting is stout enough to carry an eight-inch refractor.

New Store House and Wood Shed on the Summit: The proposed improvements to the surroundings of the tomb of James Lick make it necessary to provide a store house to contain various tools and pieces of apparatus (the electric lighting engine presented to the Lick Observatory by the Edison Manufacturing Company, among others), and accordingly the Regents of the University have set apart the sum of \$1500 to provide for such a building, and for a wood shed, which is much needed. These buildings will be placed on the summit-plateau almost directly east of the 75-foot dome.

E. S. H.

ERRATUM IN NEISON'S "MOON."

In the Map facing page 130 interchange the names Autolychus and Aristillus.

E. S. H.